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INSIDE LOGISTICS

EXPLORING THE HEART OF LOGISTICS

For Want of a Spanner

Robin Higham, PhD

A curious minor logistical mystery of Royal Air Force (RAF) history in World War II was and is the shortage of hand tools. This lasted well into 1943, 4 years after the war began and 9 years after rearmament started in 1934.

Before wartime expansion, fitters and riggers did their initial course at No. 1 Technical Training School at Habton. They specialized as engine fitters or as airframe riggers. Upon completion of the course, they were sent to squadrons where in 7 years their education was completed.

At the squadron, they reported to A, B or C Flight where they were issued a tool kit. If they were transferred from one flight to another, they had to turn in their tool kit and have the contents accounted for before proceeding across the street to draw another set from their new flight. In biplane days, a fitter or a rigger assigned to a two-seater not only acted as the gunner, but also in colonial theaters, lashed his toolbox to the wing next to the fuselage in case of a forced landing.

What makes the case of the missing hand tools so intriguing is that the historical documentation concerning the ordering of such necessary items has disappeared (meaning it has either been destroyed or it has been filed with the papers of a successor organization of unlikely title).¹

The first clue to the problem came from the operational record book (ORB) of a repair and salvage unit (RSU) in the Middle East in 1940, which opened by noting that of the RSU's 62 personnel only 25 had tools. So they were happy to pass on salvaged aircraft to whoever claimed them.

What this meant was, in a theater then desperate for serviceable aircraft, many were standing idle because the necessary repairs could not be made *for want of a spanner*, let alone the necessary spares.

The matter is important because as late as 1943 in Burma (Southeast Asia Command or SEAC), the Beaufighters of No. 26 Squadron only sortied once every 18 days due to lack of tools and spares.

The fact that the RAF had insisted on standardized nuts, bolts and other fittings meant that special tools were not needed. Unserviceability was due to the unavailability of regular tools.

Notes

1. Apart from the fact that we cannot locate the papers of the gentlemen in the Air Ministry who were responsible for ordering tools from specific companies, we have to face a loss of the equipment (engineering) officers' ORBs or monthly reports. It seems that the junior officer in a squadron was, at least until Maintenance Command was formed in 1938, the engineering officer. This essentially meant that he went down to the tarmac or the hangar in the morning and signed off on the form the flight sergeant gave him. There was, apparently, an engineering section of the ORB, and certainly at the end of World War I in 1918, there was a monthly engineering officer's report attached to the ORBs.

What happened later on seems to have been that when the records were pruned in the Air Ministry Archives before being sent to the Public Record Office. It was assumed that such mundane information was unimportant.

But it is also possible that we may find the engineering part of squadron ORB's. A recent suggestion is that those reports may have been filed with those of the new station engineering or equipment officers.

Dr. Robin Higham is currently Professor Emeritus of History at Kansas State University.

Contemporary Logistics Techniques for Allied Supply Support

Craig Brandt, PhD

Introduction

Changes in the political-military environment and a revolution in the way that commercial logistics is being conducted are paving the way for new logistics standards in the military. In the US, there is a surge of interest in using the

best of these commercial practices, and accompanying this is a move toward privatizing many noncombat logistical functions. While other nations may be undergoing such changes in their thinking, there has been little effort to look at our current system of foreign military sales (FMS) support. However, by adapting these new techniques, it is possible for the US and its allies to improve their mutual logistics support.

The Military Environment

The end of the Cold War forced a new look at the military and how it should be employed under the current circumstances

throughout the world. The focus on regional rather than global warfare is changing the shape of the logistics system. Instead of huge battles of division-sized forces employed across an easily determinable front, which would allow prepositioned supplies and equipment, new military doctrine emphasizes flexible response from combatant units deploying around the world with a small logistics footprint. Instead of each Service preserving its own niche in warfare, jointness stresses the ability of the Services to work together in an effort to capitalize on the strengths of each without duplication of resources that detract from an optimum combat capability. As the Gulf war proved, a major regional conflict is apt to rely on closely coordinated military efforts of a multinational coalition, indicating that the ability of countries to work together is extremely important in determining a military outcome. While our FMS system has always been at the forefront of interoperable forces, this new prominence devoted to alliance behavior, coupled with advances in logistics, can further enhance the possibilities of coalitions.

The Logistics Environment

In the last few years, the emphasis on customer service has led to the reexamination of logistics systems in both the private and military sectors. National deregulation of transportation has spawned innovative schemes that have driven down the price of transportation while dramatically shortening delivery times. With the improvements in transportation, faster cycle times can be achieved and lower inventory costs obtained as transportation is traded for stocks of inventory. As firms commit to concentrate on core capabilities, there has been a growth of third-party suppliers, especially firms who can take over the entire logistics function—including inventory management, transportation, warehousing, packaging and requisition processing. World interest in free trade has increased dealings abroad. Globalization means, more than ever before, that companies are able to engage in international commerce, which has been made easier by regional economic agreements, simplification of customs regulations and electronic data interchange. Logistics changes prevalent in the private sector are also being realized within the military.

FMS Supply Support Today

If we look at today's system for supply support under FMS, we find that an ally's requirement must first pass through its own national system before being transmitted to the United States. Although there are as many systems as FMS purchasers, a typical route would be for the requirement to pass from a flight-line customer to the servicing supply center, then to some centralized supply center and, frequently, to another centralized agency, often at the ministerial level, which controls requisitions submitted under FMS. The US has no control over this system. In fact, the United States historically has had little interest in it. Its view of the completion process has been the delivery to the purchasing country's freight forwarder in the US. From the country's point of view, this system has normally emphasized control at the expense of customer service, especially as it relates to the ultimate user of the spare part. In fact, complaints from the lower levels of a purchasing country's organization about lack of American responsiveness are often better aimed at a cumbersome bureaucracy within the country

itself that often takes weeks or months to submit the requirement through FMS.

Again, it must be emphasized the US cannot dictate another country's administrative systems. Nonetheless, if both countries truly believe customer service is important, then mutually we can work to improve support to the flight line. The technology is available to permit a streamlined flow of information to the US from the ultimate user. The challenge is to modify the administrative procedures already in place.

Currently, all FMS customers submit their requisitions for follow-on support to the Air Force Security Assistance Center (AFSAC) at Wright-Patterson AFB, Ohio. Requisitions are prepared in Military Standard Requisitioning and Issue Procedures (MILSTRIP) format and submitted in a variety of ways. Most commonly today, FMS customers are employing the International Logistics Communication System for sending requisitions and receiving status. This is a modern computer-to-computer technique that enters the requisition into the Security Assistance Management Information System (SAMIS), the management system employed by AFSAC, and ultimately to the USAF requisition processing system. Coupled with some front-end processors called Supply Tracking and Repairable Return/PC, FMS requisitioning is a fast, reliable method of getting requirements into the USAF supply system and an appropriate use of electronic data interchange.

After passing through SAMIS, in which the requisition is checked for MILSTRIP compatibility and adherence to FMS requirements and funds availability, the requisition is then passed to the inventory manager at the source of supply, either within the Air Force or at the Defense Logistics Agency (DLA) or another Service manager. Here the item manager checks to see if the requisition complies with the general FMS rules for issuing the material. If the requisition is approved, the materiel is issued from the appropriate DLA depot. The item is shipped by a logical means to a freight forwarder employed by the foreign purchaser. Normally, this freight forwarder is an American company, located in a tidewater area, that receives materiel and stores it until forwarding it to the purchaser. In some cases, an agency of the purchasing government may serve as the freight forwarder.

The actual movement of materiel is technically the responsibility of the purchasing country. However, the nature of the materiel—that is, often small packages originating from military depots around the country or directly from a multitude of vendors—traditionally has meant that the US will choose the means of transportation and charge the customer accordingly. Normally, small package shipments sent by mail or small package carriers are charged through the FMS billing system at a rate of 3.5 percent of the item value. If the item is large enough or if enough items from a single source can be consolidated into a large enough package, they are shipped on a collect commercial bill of lading. In this instance, the purchaser, often by means of the freight forwarder, pays the freight charges in the commercial sector without referral to the FMS billing system. In accordance with FMS rules, title to materiel normally passes to the customer at origin, thus relieving the US of further responsibility for the shipment as soon as it leaves the depot or the vendor.

Further shipment to the purchaser country is arranged by the freight forwarder. Depending on the emphasis placed on logistics responsiveness by the purchaser, the freight

forwarder might provide different transportation arrangements based on requisition priority or alternatively look for a low-cost transportation solution. When the materiel is received in-country, it is processed and transshipped in accordance with national procedures. Again, this segment of the logistics pipeline is generally unknown in the US and irrelevant to most in the FMS process.

Transportation Improvements

A first step toward streamlining the current interlocking systems might be easiest accomplished by focusing on the transportation segment. Innovation in the transportation industry has realigned roles that might be beneficial in creating a more responsive supply support system. Carriers themselves might now arrange shipments directly from the depot to the purchasing country, bypassing the need for a freight forwarder that acts only to collect materiel and arrange for onward transportation. Alliances between American and foreign carriers could provide a single company to handle the transportation from origin to destination. By contracting with a single carrier, all freight intended for a single country could be handled by the same firm, rather than using the next available carrier under the normal US system. Such a contract could yield savings in transportation costs over the usual less-than-truckload rates, which would normally prevail. If the carrier can assume responsibility for the entire route, abroad as well as in the Continental United States, a separate contract for a freight forwarder will also be avoided. With the tracking systems frequently employed by major carriers, tracking of shipments would also improve.

As the cost for international small package express shipments decreases, a country might investigate negotiating with such a carrier for high-priority shipments. Again, carriers today can deliver from overseas locations directly to a US location. This mode might yield faster response times and greater control. In addition, depending on freight rates that might be negotiated, this method might also be suitable for handling reparables. In this manner, the transportation segment of the logistics pipeline will be cut to its minimum, reducing holding costs for high-value inventory.

Next: Privatized Supply Support

While transportation advances could be adapted by foreign purchasers without any other change in the supply support system, there are still other modifications that could be made. This proposal suggests privatization of the role of AFSAC in providing follow-on supply support, relying instead on a third-party purchasing agent under contract to the purchasing country. This would eliminate any US Government involvement in the supply support system.

Currently AFSAC is an intermediary in the providing of spare parts, receiving requisitions, confirming availability of funds and passing the requisition to a source of supply. AFSAC maintains no stock and is not involved in the procurement of materiel or its shipment to the purchaser. At the air logistics centers (ALCs), foreign requisitions are filled in the same manner as USAF requisitions, although generally foreign requisitions are of lower Uniform Materiel Movement and Issue Priority System priority and thus are apt to be put at the bottom of the in-basket. Materiel availability from Air Force stocks is a function of generalized rules that revolve around whether or not a country has *invested* in the American system through a

Cooperative Logistics Supply Support Arrangement. Although materiel may be in stock, it may be unavailable to satisfy a foreign requirement. The requisition and financial tracking systems are convoluted and require heavy manual intervention.

Current Privatization Initiatives

In the case of materiel not readily available—that is, materiel considered *nonstandard*—even the Air Force has decided to employ a third-party purchasing agent. In 1990, as a means to improve response times on items not stocked by the ALCs, the Nonstandard Item Parts and Repair Support (NIPARS) system was created. AFSAC contracted with a team of companies to relieve the ALC of locating a source and purchasing difficult items. This meant requisitions would still flow through FMS channels, but eventually a decision would be made to refer the requisition to the NIPARS contractor rather than to the normal source of supply. The contractor's fees were included in the price ultimately charged the customer. The FMS administrative fee of 5 percent was still paid to cover US Government involvement in the process. This system was quite successful in cutting lead times for items compared with earlier procurements by the ALCs.

Because of the success of NIPARS, it was expanded in 1995 to the Parts and Repair Ordering System (PROS). A program of greatly expanded scope, it includes support, not just for nonstandard items but for all spares, including reparables. The concept acknowledges the value in a profit-driven, third-party supplier, but it still operates within the confines of the FMS system. Materiel status has to be provided to AFSAC so it can be incorporated into the MILSTRIP system before being passed to the customer. FMS financial systems, already unbelievably cumbersome, must be modified even further to accept billings from the PROS contractor. As a US Government contract, the management and administration of the contract still require adherence to federal acquisition regulations. Ultimately, while relieving the difficulties at the ALCs, a new bureaucracy at Wright-Patterson AFB has been created to cope with the contract administration. And of course, the foreign customer stills pays for this government overhead.

Benefits of Total Privatization

Since it seems obvious that the private third-party can successfully handle the most difficult cases of supply support where no materiel or repair capability exists, then transferring responsibility for all supply support to a private contractor can easily be accomplished. In fact, this has been admitted by the Air Force under the terms of the new PROS contract. What is not obvious is the value of maintaining such a contractor under the auspices of AFSAC.

If a foreign country were to contract for a third-party purchasing agent, even using a contract similar to that employed in PROS, there would still be benefits for the purchaser. Now there would be a direct link created from the foreign country to an agent under its control, not under the control of the US Government. No longer would the cumbersome information systems of SAMIS, MILSTRIP and finance drive the information requirements. A country could agree with a contractor on a requisitioning system that would employ outputs from its own logistics systems rather than converting everything into a format acceptable to the Air Force. Since the first stop of the requisition would be the

contractor, rather than a variety of intermediaries who must first decide whether they want to act on it, response time will be improved. Past experience has shown that contractor responsiveness to requests for difficult items has greatly improved over government buyers. It is unlikely that such disparity will exist for standard parts, yet as US stocks get lower and there is more reliance on vendor-managed inventories, it is likely that a contractor can still better the government's delivery times.

Financial reporting will be much simplified. Today's FMS financial system requires that all charges be transmitted as charges against a line-item requisition, which often requires substantial manipulation of cost data. In addition, transportation charges, where applicable, are based on a percentage of purchase price rather than on actual movement cost. As businesses of all stripes become more adept at international commerce, international financial transactions should become commonplace and present little difficulty to the purchaser or contractor. In all likelihood, a private contractor should be able to develop a financial system that will not require the heavy advance payment of the FMS system.

A contractor representing a single foreign purchase could develop a strategic alliance with a transportation company, something that the PROS contractor representing the US Government cannot. Thus, the possibility of revolutionizing the transportation segment of the follow-on support cycle is more likely to occur with a private third party than under participation in FMS.

The bottom line of moving toward a private third-party

purchasing agent, then, is faster cycle time for the foreign customer. Air Force attempts such as NIPARS and PROS, as well as the Navy's analogous program Fast Line, have shown the value of privatization. It is time to take the next step and remove the final government intermediaries in the support process and turn the entire system over to a relationship between a country and its agent, where the purchaser is free to construct an arrangement that suits it but is not dependent on the intercession of the Air Force.

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Best Article Written by a

The Executive Board of the Society of Logistics Engineers (SOLE) Chapter, Montgomery, Alabama, selected "Deploying and Sustaining an F-117A Expeditionary Fighter Squadron: Why Agile Combat Is Needed Now" (Volume XXII, Number 4), Captain Jamie D. Allen,

Logistics Lessons Learned

The Air Force Historical Foundation selected "The Political Economy of Privatization for the American Military," (Volume XXII, Number 2), written by Colonel R. Philip

Most Significant Article Award

The Editorial Advisory Board selected "Mergers and Acquisitions in the defense Industrial Base—Should the US Military Be Concerned?" written by Lieutenant Colonel Kevin A. Bell, USAF, as the most significant article in Volume XXII, Number 4 of the *Air Force Journal of Logistics*.